

## Glossary

**Ampere:** The unit of measurement of electrical current produced in a circuit by 1 volt acting through a resistance of 1 ohm.

**Anthracite:** A hard, black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. Comprises three groups classified according to the following ASTM Specification D388-84, on a dry mineral-matter-free basis:

|                 | Fixed Carbon Limits |    | Volatile Matter |    |
|-----------------|---------------------|----|-----------------|----|
|                 | GE                  | LT | GT              | LE |
| Meta-Anthracite | 98                  | -  | -               | 2  |
| Anthracite      | 92                  | 98 | 2               | 8  |
| Semiathracite   | 86                  | 92 | 8               | 14 |

**Average Revenue per Kilowatthour:** The average revenue per kilowatthour of electricity sold by sector (residential, commercial, industrial, or other) and geographic area (State, Census division, and national), is calculated by dividing the total monthly revenue by the corresponding total monthly sales for each sector and geographic area.

**Barrel:** A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons.

**Baseload:** The minimum amount of electric power delivered or required over a given period of time at a steady rate.

**Baseload Capacity:** The generating equipment normally operated to serve loads on an around-the-clock basis.

**Baseload Plant:** A plant, usually housing high-efficiency steam-electric units, which is normally operated to take all or part of the minimum load of a system, and which consequently produces electricity at an essentially constant rate and runs continuously. These units are operated to maximize system mechanical and thermal efficiency and minimize system operating costs.

**Bcf:** The abbreviation for 1 billion cubic feet.

**Bituminous Coal:** The most common coal. It is dense and black (often with well-defined bands of bright and dull material). Its moisture content usually is less than 20 percent. It is used for generating electricity, making coke, and space heating. Comprises five groups classified according to the following ASTM Specification D388-84, on a dry mineral-matter-free (mmf) basis for fixed-carbon and volatile matter and a moist mmf basis for calorific value.

|     | Fixed Carbon Limits |    | Volatile Matter Limits |    | Calorific Value Limits Btu/lb |       |
|-----|---------------------|----|------------------------|----|-------------------------------|-------|
|     | GE                  | LT | GT                     | LT | GE                            | LE    |
| LV  | 78                  | 86 | 14                     | 22 | -                             | -     |
| MV  | 69                  | 78 | 22                     | 31 | -                             | -     |
| HVA | -                   | 69 | 31                     | -  | 14000                         | -     |
| HVB | -                   | -  | -                      | -  | 13000                         | 14000 |
| HVC | -                   | -  | -                      | -  | 10500                         | 13000 |

LV = Low-volatile bituminous coal

MV = Medium-volatile bituminous coal

HVA = High-volatile A bituminous coal

HVB = High-volatile B bituminous coal

HVC = High-volatile C bituminous coal

**Boiler:** A device for generating steam for power, processing, or heating purposes or for producing hot water for heating purposes or hot water supply. Heat from an external combustion source is transmitted to a fluid contained within the tubes in the boiler shell. This fluid is delivered to an end-use at a desired pressure, temperature, and quality.

**Btu (British Thermal Unit):** A standard unit for measuring the quantity of heat energy equal to the quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit.

**Capability:** The maximum load that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given period of time without exceeding approved limits of temperature and stress.

**Capacity:** The full-load continuous rating of a generator, prime mover, or other electric equipment under specified conditions as designated by the manufacturer. It is usually indicated on a nameplate attached to the equipment.

**Capacity (Purchased):** The amount of energy and capacity available for purchase from outside the system.

**Census Divisions:** The nine geographic divisions of the United States established by the Bureau of the Census, U.S. Department of Commerce, for the purpose of statistical analysis. The boundaries of Census divisions coincide with State boundaries. The Pacific Division is subdivided into the Pacific Contiguous and Pacific Noncontiguous areas.

**Circuit:** A conductor or a system of conductors through which electric current flows.

**Coal:** A black or brownish-black solid combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal, subbituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value. Coal rank indicates the progressive alteration from lignite to anthracite. Lignite contains approximately 9 to 17 million Btu per ton. The contents of subbituminous and bituminous coal range from 16 to 24 million Btu per ton and from 19 to 30 million Btu per ton, respectively. Anthracite contains approximately 22 to 28 million Btu per ton.

**Coincidental Demand:** The sum of two or more demands that occur in the same time interval.

**Coincidental Peak Load:** The sum of two or more peak loads that occur in the same time interval.

**Coke (Petroleum):** A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5 barrels (42 U.S. gallons each) per short ton.

**Combined Pumped-Storage Plant:** A pumped-storage hydroelectric power plant that uses both pumped water and natural streamflow to produce electricity.

**Commercial Operation:** Commercial operation begins when control of the loading of the generator is turned over to the system dispatcher.

**Compressor:** A pump or other type of machine using a turbine to compress a gas by reducing the volume.

**Consumption (Fuel):** The amount of fuel used for gross generation, providing standby service, start-up and/or flame stabilization.

**Contract Receipts:** Purchases based on a negotiated agreement that generally covers a period of 1 or more years.

**Cost:** The amount paid to acquire resources, such as plant and equipment, fuel, or labor services.

**Crude Oil (including Lease Condensate):** A mixture of hydrocarbons that existed in liquid phase in underground reservoirs and that remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and shale oil. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable.

**Current (Electric):** A flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes.

**Demand (Electric):** The rate at which electric energy is delivered to or by a system, part of a system, or piece of equipment, at a given instant or averaged over any designated period of time.

**Demand Interval:** The time period during which flow of electricity is measured (usually in 15-, 30-, or 60-minute increments.)

**Electric Plant (Physical):** A facility containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

**Electric Utility:** An enterprise that is engaged in the generation, transmission, or distribution of electric energy primarily for use by the public and that is the major power supplier within a designated service area. Electric utilities include investor-owned, publicly owned, cooperatively owned, and government-owned (municipals, Federal agencies, State projects, and public power districts) systems.

**Energy:** The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units.

**Energy Deliveries:** Energy generated by one electric utility system and delivered to another system through one or more transmission lines.

**Energy Receipts:** Energy generated by one electric utility system and received by another system through one or more transmission lines.

**Energy Source:** The primary source that provides the power that is converted to electricity through chemical, mechanical, or other means. Energy sources include coal, petroleum and petroleum products, gas, water, uranium, wind, sunlight, geothermal, and other sources.

**Fahrenheit:** A temperature scale on which the boiling point of water is at 212 degrees above zero on the scale and the freezing point is at 32 degrees above zero at standard atmospheric pressure.

**Failure or Hazard:** Any electric power supply equipment or facility failure or other event that, in the judgment of the reporting entity, constitutes a hazard to maintaining the continuity of the bulk electric power supply system such that a load reduction action may become necessary and a reportable outage may occur. The imposition of a special operating procedure, the extended purchase of emergency power, other bulk power system actions that may be caused by a natural disaster, a major equipment failure that would impact the bulk power supply, and an environmental and/or regulatory action requiring equipment outages are types of abnormal conditions that should be reported.

**Firm Gas:** Gas sold on a continuous and generally long-term contract.

**Fossil Fuel:** Any naturally occurring organic fuel, such as petroleum, coal, and natural gas.

**Fossil-Fuel Plant:** A plant using coal, petroleum, or gas as its source of energy.

**Fuel:** Any substance that can be burned to produce heat; also, materials that can be fissioned in a chain reaction to produce heat.

**Fuel Emergencies:** An emergency that exists when supplies of fuels or hydroelectric storage for generation are at a level or estimated to be at a level that would threaten the reliability or adequacy of bulk electric power supply. The following factors should be taken into account to determine that a fuel emergency exists: (1) Fuel stock or hydroelectric project water storage levels are 50 percent or less of normal for that particular time of the year and a continued downward trend in fuel stock or hydroelectric project water storage level are estimated; or (2) Unscheduled dispatch or emergency generation is causing an abnormal use of a particular fuel type, such that the future supply or stocks of that fuel could reach a level which threatens the reliability or adequacy of bulk electric power supply.

**Gas:** A fuel burned under boilers and by internal combustion engines for electric generation. These include natural, manufactured and waste gas.

**Generation (Electricity):** The process of producing electric energy by transforming other forms of energy; also, the amount of electric energy produced, expressed in watthours (Wh).

*Gross Generation:* The total amount of electric energy produced by the generating units at a generating station or stations, measured at the generator terminals.

*Net Generation:* Gross generation less the electric energy consumed at the generating station for station use.

**Generator:** A machine that converts mechanical energy into electrical energy.

**Generator Nameplate Capacity:** The full-load continuous rating of a generator, prime mover, or other electric power production equipment under specific conditions as designated by the manufacturer. Installed generator nameplate rating is usually indicated on a nameplate physically attached to the generator.

**Geothermal Plant:** A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam that derives its energy from heat found in rocks or fluids at various depths beneath the surface of the earth. The energy is extracted by drilling and/or pumping.

**Gigawatt (GW):** One billion watts.

**Gigawatthour (GWh):** One billion watthours.

**Gross Generation:** The total amount of electric energy produced by a generating facility, as measured at the generator terminals.

**Heavy Oil:** The fuel oils remaining after the lighter oils have been distilled off during the refining process. Except for start-up and flame stabilization, virtually all petroleum used in steam plants is heavy oil.

**Horsepower:** A unit for measuring the rate of work (or power) equivalent to 33,000 foot-pounds per minute or 746 watts.

**Hydroelectric Plant:** A plant in which the turbine generators are driven by falling water.

**Instantaneous Peak Demand:** The maximum demand at the instant of greatest load.

**Integrated Demand:** The summation of the continuously varying instantaneous demand averaged over a specified interval of time. The information is usually determined by examining a demand meter.

**Internal Combustion Plant:** A plant in which the prime mover is an internal combustion engine. An internal combustion engine has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel or gas-fired engines are the principal types used in electric plants. The plant is usually operated during periods of high demand for electricity.

**Interruptible Gas:** Gas sold to customers with a provision that permits curtailment or cessation of service at the discretion of the distributing company under certain circumstances, as specified in the service contract.

**Kilowatt (kW):** One thousand watts.

**Kilowatthour (kWh):** One thousand watthours.

**Light Oil:** Lighter fuel oils distilled off during the refining process. Virtually all petroleum used in internal combustion and gas-turbine engines is light oil.

**Lignite:** A brownish-black coal of low rank with high inherent moisture and volatile matter (used almost exclusively for electric power generation). It is also referred to as brown coal. Comprises two groups classified according to the following ASTM Specification D388-84 for calorific values on a moist material-matter-free basis:

|           | Limits Btu/lb. |       |
|-----------|----------------|-------|
|           | GE             | LT    |
| Lignite A | 6,300          | 8,300 |
| Lignite B | -              | 6,300 |

**Maximum Demand:** The greatest of all demands of the load that has occurred within a specified period of time.

**Mcf:** One thousand cubic feet.

**Megawatt (MW):** One million watts.

**Megawatthour (MWh):** One million watthours.

**MMcf:** One million cubic feet.

**Natural Gas:** A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in porous geological formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

**Net Energy for Load:** Net generation of main generating units that are system-owned or system-operated plus energy receipts minus energy deliveries.

**Net Generation:** Gross generation minus plant use from all electric utility owned plants. The energy required for pumping at a pumped-storage plant is regarded as plant use and must be deducted from the gross generation.

**Net Summer Capability:** The steady hourly output, which generating equipment is expected to supply to system load exclusive of auxiliary power, as demonstrated by tests at the time of summer peak demand.

**Noncoincidental Peak Load:** The sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only when considering loads within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than 1 year.

**North American Electric Reliability Council (NERC):** A council formed in 1968 by the electric utility industry to

promote the reliability and adequacy of bulk power supply in the electric utility systems of North America. The NERC Regions are:

ASCC – Alaskan System Coordination Council  
ECAR – East Central Area Reliability Coordination Agreement  
ERCOT – Electric Reliability Council of Texas  
FRCC – Florida Reliability Coordinating Council  
MAIN – Mid-America Interconnected Network  
MAAC – Mid-Atlantic Area Council  
MAPP – Mid-Continent Area Power Pool  
NPCC – Northeast Power Coordinating Council  
SERC – Southeastern Electric Reliability Council  
SPP – Southwest Power Pool  
WSCC – Western Systems Coordinating Council

**Nuclear Fuel:** Fissionable materials that have been enriched to such a composition that, when placed in a nuclear reactor, will support a self-sustaining fission chain reaction, producing heat in a controlled manner for process use.

**Nuclear Power Plant:** A facility in which heat produced in a reactor by the fissioning of nuclear fuel is used to drive a steam turbine.

**Off-Peak Gas:** Gas that is to be delivered and taken on demand when demand is not at its peak.

**Ohm:** The unit of measurement of electrical resistance. The resistance of a circuit in which a potential difference of 1 volt produces a current of 1 ampere.

**Operable Nuclear Unit:** A nuclear unit is "operable" after it completes low-power testing and is granted authorization to operate at full power. This occurs when it receives its full power amendment to its operating license from the Nuclear Regulatory Commission.

**Other Gas:** Includes manufactured gas, coke-oven gas, blast-furnace gas, and refinery gas. Manufactured gas is obtained by distillation of coal, by the thermal decomposition of oil, or by the reaction of steam passing through a bed of heated coal or coke.

**Other Generation:** Electricity originating from these sources: biomass, fuel cells, geothermal heat, solar power, waste, wind, and wood.

**Other Unavailable Capability:** Net capability of main generating units that are unavailable for load for reasons other than full-forced outage or scheduled maintenance. Legal restrictions or other causes make these units unavailable.

**Peak Demand:** The maximum load during a specified period of time.

**Peak Load Plant:** A plant usually housing old, low-efficiency steam units; gas turbines; diesels; or pumped-storage hydroelectric equipment normally used during the peak-load periods.

**Peaking Capacity:** Capacity of generating equipment normally reserved for operation during the hours of highest daily, weekly, or seasonal loads. Some generating equipment may be operated at certain times as peaking capacity and at other times to serve loads on an around-the-clock basis.

**Percent Difference:** The relative change in a quantity over a specified time period. It is calculated as follows: the current value has the previous value subtracted from it; this new number is divided by the absolute value of the previous value; then this new number is multiplied by 100.

**Petroleum:** A mixture of hydrocarbons existing in the liquid state found in natural underground reservoirs, often associated with gas. Petroleum includes fuel oil No. 2, No. 4, No. 5, No. 6; topped crude; Kerosene; and jet fuel.

**Petroleum Coke:** See Coke (Petroleum).

**Petroleum (Crude Oil):** A naturally occurring, oily, flammable liquid composed principally of hydrocarbons. Crude oil is occasionally found in springs or pools but usually is drilled from wells beneath the earth's surface.

**Plant:** A facility at which are located prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or nuclear energy into electric energy. A plant may contain more than one type of prime mover. Electric utility plants exclude facilities that satisfy the definition of a qualifying facility under the Public Utility Regulatory Policies Act of 1978.

**Plant Use:** The electric energy used in the operation of a plant. Included in this definition is the energy required for pumping at pumped-storage plants.

**Plant-Use Electricity:** The electric energy used in the operation of a plant. This energy total is subtracted from the gross energy production of the plant; for reporting purposes the plant energy production is then reported as a net figure. The energy required for pumping at pumped-storage plants is, by definition, subtracted, and the energy production for these plants is then reported as a net figure.

**Power:** The rate at which energy is transferred. Electrical energy is usually measured in watts. Also used for a measurement of capacity.

**Price:** The amount of money or consideration-in-kind for which a service is bought, sold, or offered for sale.

**Prime Mover:** The motive force that drives an electric generator (e.g., steam engine, turbine, or water wheel).

**Production (Electric):** Act or process of producing electric energy from other forms of energy; also, the amount of electric energy expressed in wattohours (Wh).

**Pumped-Storage Hydroelectric Plant:** A plant that usually generates electric energy during peak-load periods by using water previously pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available to do so. When additional generating capacity is needed, the water can be released from the reservoir through a conduit to turbine generators located in a power plant at a lower level.

**Pure Pumped-Storage Hydroelectric Plant:** A plant that produces power only from water that has previously been pumped to an upper reservoir.

**Qualifying Facility (QF):** This is a cogenerator or small power producer that meets certain ownership, operating and efficiency criteria established by the Federal Energy Regulatory Commission (FERC) pursuant to the PURPA, and has filed with the FERC for QF status or has self-certified. For additional information, see the Code of Federal Regulation, Title 18, Part 292.

**Railroad and Railway Electric Service:** Electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

**Receipts:** Purchases of fuel.

**Reserve Margin (Operating):** The amount of unused available capability of an electric power system at peak load for a utility system as a percentage of total capability.

**Restoration Time:** The time when the major portion of the interrupted load has been restored and the emergency is considered to be ended. However, some of the loads interrupted may not have been restored due to local problems.

**Restricted-Universe Census:** This is the complete enumeration of data from a specifically defined subset of entities including, for example, those that exceed a given level of sales or generator nameplate capacity.

**Retail:** Sales covering electrical energy supplied for residential, commercial, and industrial end-use purposes. Other small classes, such as agriculture and street lighting, also are included in this category.

**Running and Quick-Start Capability:** The net capability of generating units that carry load or have quick-start capability. In general, quick-start capability refers to generating units that can be available for load within a 30-minute period.

**Sales:** The amount of kilowatthours sold in a given period of time; usually grouped by classes of service, such as residential, commercial, industrial, and other. Other sales include public street and highway lighting, other sales to public authorities and railways, and interdepartmental sales.

**Sales for Resale:** Energy supplied to other electric utilities, cooperatives, municipalities, and Federal and State electric agencies for resale to ultimate consumers.

**Scheduled Outage:** The shutdown of a generating unit, transmission line, or other facility, for inspection or maintenance, in accordance with an advance schedule.

**Short Ton:** A unit of weight equal to 2,000 pounds.

**Spot Purchases:** A single shipment of fuel or volumes of fuel, purchased for delivery within 1 year. Spot purchases are often made by a user to fulfill a certain portion of energy requirements, to meet unanticipated energy needs, or to take advantage of low-fuel prices.

**Standby Facility:** A facility that supports a utility system and is generally running under no-load. It is available to replace or supplement a facility normally in service.

**Standby Service:** Support service that is available, as needed, to supplement a consumer, a utility system, or to another utility if a schedule or an agreement authorizes the transaction. The service is not regularly used.

**Steam-Electric Plant (Conventional):** A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

**Stocks:** A supply of fuel accumulated for future use. This includes coal and fuel oil stocks at the plant site, in coal cars, tanks, or barges at the plant site, or at separate storage sites.

**Subbituminous Coal:** Subbituminous coal, or black lignite, is dull black and generally contains 20 to 30 percent moisture. The heat content of subbituminous coal ranges from 16 to 24 million Btu per ton as received and averages about 18 million Btu per ton. Subbituminous coal, mined in the western coal fields, is used for generating electricity and space heating.

**Substation:** Facility equipment that switches, changes, or regulates electric voltage.

**Sulfur:** One of the elements present in varying quantities in coal which contributes to environmental degradation when coal is burned. In terms of sulfur content by weight, coal is generally classified as low (less than or equal to 1

percent), medium (greater than 1 percent and less than or equal to 3 percent), and high (greater than 3 percent). Sulfur content is measured as a percent by weight of coal on an "as received" or a "dry" (moisture-free, usually part of a laboratory analysis) basis.

**Switching Station:** Facility equipment used to tie together two or more electric circuits through switches. The switches are selectively arranged to permit a circuit to be disconnected, or to change the electric connection between the circuits.

**System (Electric):** Physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management, or operating supervision.

**Transformer:** An electrical device for changing the voltage of alternating current.

**Transmission:** The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers, or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

**Transmission System (Electric):** An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers, or is delivered to other electric systems.

**Turbine:** A machine for generating rotary mechanical power from the energy of a stream of fluid (such as water, steam, or hot gas). Turbines convert the kinetic energy of fluids to mechanical energy through the principles of impulse and reaction, or a mixture of the two.

**Watt:** The electrical unit of power. The rate of energy transfer equivalent to 1 ampere flowing under a pressure of 1 volt at unity power factor.

**Watthour (Wh):** An electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit steadily for 1 hour.

**Wheeling Service:** The movement of electricity from one system to another over transmission facilities of intervening systems. Wheeling service contracts can be established between two or more systems.

**Year to Date:** The cumulative sum of each month's value starting with January and ending with the current month of the data.